

Date: Wed, 9 Feb 94 04:30:37 PST
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #24
To: Ham-Homebrew

Ham-Homebrew Digest Wed, 9 Feb 94 Volume 94 : Issue 24

Today's Topics:

 100hz tone board
 2m/70cm linear - circuit wanted
 Microphones & motorcycle helmets (2 msgs)
 QRP shopping list
 Securing VXO coils, what glue?

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Thu, 3 Feb 1994 19:20:53 GMT
From: mvb.saic.com!unogate!news.service.uci.edu!usc!howland.reston.ans.net!
vixen.cso.uiuc.edu!moe.ksu.ksu.edu!usenet-feed.umn.edu!n0mgj@network.ucsd.edu
Subject: 100hz tone board
To: ham-homebrew@ucsd.edu

Can anyone help me with the specs on a 100hz tone board. Recently our repeter was
forces to use a 100hz ctcss sub audible tone. Dose anyone have the specs on
building one. It is for a mobile radio with plenty of space inside so tiny is not
a necessity.

Thanks in advance for any help.

Willie Sandin
n0mgj@eeclc.ee.umn.edu
n0mgj@umn.edu

Date: Tue, 8 Feb 94 08:07:57 GMT
From: mnemosyne.cs.du.edu!nyx!dtock@uunet.uu.net
Subject: 2m/70cm linear - circuit wanted
To: ham-homebrew@ucsd.edu

I use a dual band Icom HT in the car. Having bent longer aeralals, I now use a 1/4 wave. I could do with more 'oomph' but find commercial dual band linears excessively pricey - typically between 250 and 400 UK pounds.

Can anyone give me pointers to published designs or suitable circuits to build one myself? Other comments or suggestions welcomed.

Thanks

David (GM0SYA)

Date: Sun, 06 Feb 94 21:52:26 PST
From: agate!howland.reston.ans.net!sol.ctr.columbia.edu!destroyer!nntp.cs.ubc.ca!
mala.bc.ca!oneb!ham!emd@network.ucsd.edu
Subject: Microphones & motorcycle helmets
To: ham-homebrew@ucsd.edu

timi@mendel.berkeley.edu (Tim Ikeda) writes:

> I'm wondering if anyone has a good system for reducing the wind
> and engine noise picked up by full-faced helmet microphones. A lot
> of the noise seems to come up from under the chin bar. Would it be
> feasible to rig a noise-cancelling, two-microphone system such
> that one microphone pointed downward is connected 180 degrees out
> of phase with one aimed at the mouth? Is there somethind else that
> might do the trick? I'd also like to be able to run VOX without
> shouting into the mike (Shouting in the helmet seems to cause horrible
> sounding audio).
>
> Anyone out there with some experience at rigging helmet systems?
>
> Regards,
> Tim Ikeda
> timi@mendel.berkeley.edu

I'd vote for rigging a push to talk switch on the handlebars, preferably close enough to get at it with your thumb. At least, that's what I did, after no amount of fiddling would get a VOX system to work reliably.

I used a Bell Star with a microphone element mounted in the chin bar padding (and an 8 ohm headphone speaker near the right ear), and wind noise only became objectionable over 120 kph or so, according to those I was talking with, anyway.

A ptt switch was installed with a bracket on one of the bolts holding the front brake lever to the handlebar.

Seemed to work alright, but it was distracting.

Robert Smits
VE7EMD
Ladysmith B.C.
e-mail: emd@ham.almanac.bc.ca

There is *no* idiotproof filter.
Idiots are proof against anything!
- Richard Chycoski, VE7CVS

Date: 4 Feb 1994 23:22:46 GMT
From: nntp.ucsb.edu!library.ucla.edu!europa.eng.gtefsd.com!howland.reston.ans.net!
spool.mu.edu!sol.ctr.columbia.edu!news.kei.com!newsstand.cit.cornell.edu!
newsstand.cit.cornell.edu!usenet@..
Subject: Microphones & motorcycle helmets
To: ham-homebrew@ucsd.edu

In article <timi-040294124828@kos4mac22.berkeley.edu> Tim Ikeda,
timi@mendel.berkeley.edu writes:

>
>Thanks for the post, Kevin.
>I'm intrigued with your idea of using dual band HTs as a full-duplex
>intercom system between the driver and the passenger. I like the
>idea of a comm system that might still work even after the passenger
>falls off. ;^)

Well, that gets pretty expensive for a system (2 times \$300 per HT plus headset) that mostly just needs a \$20 intercom. :-) Fortunately I haven't lost the passenger too often. The couples that have two riders with radios do it mostly because she is a ham too and doesn't want to miss out on the conversation. Plus it cuts the entangling wiring down.

>
>Ultimately I'd like to rig a system (like below) for my bike. I'd
>like to also find a source of good mike elements (salvaged or new)
>that I could use. I've been scanning some books on op-amps for
>circuits I might try, but this project could easily overwhelm my
>poor circuit design abilities. So any pointers would be greatly
>appreciated.

>

```

>
> headset #1                                headset #2
>
> mic-----' '-----mic
>                [in]
>                preamp/mix
>                | [out] |
>                |      | (attenuation needed?)
>                amp    mic
>                |      >HT unit< (switching needed)
>                | /--- spkr
>                mix
> phones----vol-----' '-----vol---phones
>
>- Tim Ikeda (timi@mendel.berkeley.edu)

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Hmmm, not sure what is going on there with the ascii art (I'm not very good at that myself, and I don't read it well)

but I've thought of a system where I could basically mate a radio system to an intercom system with perhaps an enhanced vox system. Features I wanted were the ability to put audio to both riders on the intercom, route my audio to the radio normally, and the 2nd person on the intercom on demand. Have full duplex intercom running all the time. At least touch on touch off control, with good sidetone so I could tell for sure when I was transmitting (maybe with a tone in my ear - or just my voice gotten louder) Haven't come up with anything yet, but I have been thinking about it. Most of the intercoms are just LM386's with a resistive divider on the input and the output paralleled to both headsets. That would work with a tap in to the mic line from the radio speaker through an attenuator, and another attenuator to take the speaker output to the helmet speakers down to mike input levels. I've definately thought about this at times, but sort of ran out of impetus to continue on the project last summer. Maybe this year...

For vox, I think I'd want a good sidetone so I could tell when I was keyed up, a timer to kill it after 30 seonds or so anyway, a quick 'kill ptt' button to lock off the transmitter when I don't want to vox, and probably some fancy differential filtering circuit to compare road noise to voiceband levels and only key if the voiceband to noise ratio goes up, not if they both go up (to keep it from keying by a general rise in noise from a truck or increased wind. You might ride into a headwind you know :-)

Could you give me a text description of your desired circuit so I can maybe make better comments?

Kevin

Date: Tue, 8 Feb 1994 19:50:03 GMT
 From: crl.dec.com!crl.dec.com!nntpd.lkg.dec.com!ryn.mro.dec.com!est.enet.dec.com!randolph@decwrl.dec.com
 Subject: QRP shopping list
 To: ham-homebrew@ucsd.edu

With flea market season rapidly approaching here in the NE, I sat down with W1FB's QRP Notebook and went through all the schematics to compile this parts list. This is everything that appears 3 or more times in the book, except for important stuff like chips. Buy lots of it if it has a + next to it. So now you all can fill up your QRP junk boxes...

Transistors	Amidon cores	Diodes	Chokes	Enamel	Hardware
2N2222A+	T24-43 ?	1N914+	1mH+	Wire	6-32
2N3553	T37-6+		22uH+	#18	4-40
2N3866	T50-2+	Zeners	15uH	#20	
2N3904+	T50-6+	6.8V	10uH	#24	
2N4400+	T68-2+	9.1V		#26	
2N4401+	T68-6	15V		#28	
2N4403+	FT37-43+	33V		#30	
2N4416+	FT50-43+	56V (0.4 & 1W)			
2N5179+	FT50-63				
MPF102+	BLN43-202				
40673 (NTE222)	Bead, 850mu				

Chips	Op Amps	Pots	Mini Air	Ceramic or
CA3028 (RCA)	741	100k+	Variable	Mica Trimmer
CA3046	747	10k+	15	5 50
LM386 (Natl)	TL081 (TI)	1k	25	10 60+
LM723			50	15 100+
MC1350P (Moto)			100+	25 300
MC1496G			150	
MC3346P				
MWA110				
NE555 (Sig)				
NE602				
uPC1651G (NEC)				

Disk Ceramic	NP0	Electrolytic	Polystyrene
22 100+ 0.001++ (102)	22 100+	or Tantalum	220
27 130 0.005 (502)	27 130	1+	560
33 150+ 0.01++ (103)	47+ 150	2.2+	1000
47+ 220 0.1++ (104)	56+ 220	4.7	1500
56+ 470	68	10+	2000
68+ 680		22+ (16 & 25V)	2200+

220 10000
15000

Resistors (1/4 & 1/2w, comp or film)

10+	100++	1.0k++	10k++	100k++	Silver	Mica
15	150	1.5k+	12k	220k+	130	390
22	180+	2.2k+	15k	470k+	150+	470
33+	220	2.7k	22k+		180+	560
47+	270+	3.3k+	27k+		220	750
56+	390	3.9k	33k		240	1000
	470+	4.7k+	47k+		270+	1200
	560+	5.6k+	56k+		330	

-Tom R. N100Q randolph@est.enet.dec.com

Date: 3 Feb 94 20:56:42 GMT
From: sdd.hp.com!col.hp.com!srngenprp!alanb@hplabs.hp.com
Subject: Securing VX0 coils, what glue?
To: ham-homebrew@ucsd.edu

asirene@ntuvax.ntu.ac.sg (asirene@ntuvax.ntu.ac.sg) wrote:
: Hi,

: I am winding some coils for a VX0 and want to know if
: the "glue-gun" melted plastic is suitable for securing the coil
: or if it is too lossy?

Most of the low-temperature thermoplastics like polyethelene,
polystyrene, etc have low loss at RF frequencies. My guess is that
hot-melt glue would probably work fine, especially if you don't
use huge gobs of it.

AL N1AL

Date: Fri, 04 Feb 1994 18:18:57 -0800
From: munnari.oz.au!metro!dmssyd.syd.dms.CSIRO.AU!dmsperth.per.dms.CSIRO.AU!uniwa!
harbinger.cc.monash.edu.au!yeshua.marcam.com!news.kei.com!eff!usenet.ins.cwru.edu!
agate!NewsWatcher!user@.
To: ham-homebrew@ucsd.edu

References <timi-030294191125@kos4mac22.berkeley.edu>,
<timi-040294124828@kos4mac22.berkeley.edu>,
<2iulc6INNgak@newsstand.cit.cornell.edu>.marcam.
Subject : Re: Microphones & motorcycle helmets

In article <2iulc6INNgak@newsstand.cit.cornell.edu>,
F. Kevin Feeney <fkf1@cornell.edu> wrote:

[...]

>For vox, I think I'd want a good sidetone so I could tell when I was
>keyed up, a timer to kill it after 30 seconds or so anyway, a quick 'kill
>ptt' button to lock off the transmitter when I don't want to vox,
[...]

Would it be possible to detect transmission from the antenna?
Something that would detect a voltage potential in the line and also
have high impedance? That signal could be used to gate a tone or
start a timer.

>Could you give me a text description of your desired circuit so I can
>maybe make better comments?

It's is very similar to what you've described.

Ok, here goes.

Starting from the input - Signals from both the driver's and passenger's
microphones are put through a preamplifier and mixed. Part of this
amplified signal is sent to the microphone input of the radio. If
there's a preamp before the radio input, I think I'll need to bring
the signal back down again before putting into the radio. Or maybe
I'd better skip the pre-amp step?

Output:

Output from the microphone preamp is boosted to a level needed to drive
headset speakers. I don't know whether I need the preamp/amp
combination or if a single-step amplifier will do the trick. I
recently tried and failed to build a stable, single-step microphone-
to-speaker amp so that's why I'm considering a preamp. (Oddly enough,
my "custom amp" worked just fine as a broadband AM receiver - my first
homebrewed radio in ten years!). The audio signal is also mixed
with the speaker output from the radio and the mixed audio is finally
sent out to the headphones; each with their own volume control pots.

Switches: To be announced. I'm not sure yet. As Ted Kennedy says,
"I'll drive off that bridge when I come to it."

Basically, it looks like a three-person intercom with a radio plugged
in as the third party. Neither rider will be left out of a
conversation. Because the helmets and earplugs reduce hearing, each
rider gets their voice fed back into their earpieces to compensate.
That should prevent the mistake of screaming into the microphone
because you can't hear your own voice.

Regards,
Tim Ikeda
timi@mendel.berkeley.edu

References <1994Jan25.191202.1@ntuvax.ntu.ac.sg>,
<1994Jan26.001852.3038@ke4zv.atl.ga.us>,
<KITAGAWA.94Feb1233949@qed.laser.ee.es.osaka-u.ac.jp>ews
Subject : Re: Antenna pre-amp design. Help!

Gosh. If you must nit-pick, at least get it right.

End of Ham-Homebrew Digest V94 #24
